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A 0270-1829

34M1/0416

EXAMINER

VO. ART UNIT PAPER NUMBER

3402

9

DATE MAILED: 04/16/97

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This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☐ This application has been examined ☒ Responsive to communication filed on 2/18/1997 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire three month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133.

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.      | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152.       |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/> _____   |

**Part II SUMMARY OF ACTION**

1. ☒ Claims 1-20 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1-20 are rejected.
5. ☐ Claims \_\_\_\_\_ are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☒ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

**EXAMINER'S ACTION**

Art Unit: 3402

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 10 are objected to because of the following informalities:  
the term "said cylinder block", line 4, should be changed to -- said cylinder head--  
Appropriate correction is required.

### ***Claim Rejections - 35 U.S.C. § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Thimmesh of U.S. Pat. 5,595,164.

Thimmesh shows in Figures 1-3 a heating device 10 coupled to a cylinder head 12. Cylinder head 12 is adapted to include an intake opening 54 and mounting surface 56 (col. 3 lines 55-56). The heating device 10 includes a frame 16 having a flange 18 and recessed body portion 19 having side walls 20 which extending perpendicular below the mounting flange 18 (col. 2 lines 62-67 to col. 3 lines 1). A heating element 26 is secured within C-shaped mounting

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element 25 (col 3 lines 4-12). First end 28 of heating element 26 is connected to the positive terminal of the power source 29 and second end 30 operates as the grounding connection for heating element 26 thus a circuit is formed to conduct electricity through the heater element 26 (col. 3 lines 22-29). In operation, airflow enters the cylinder head 12 through inlet means 102, which is formed in the cover 14, and the heating element 26 is heated by the electric current and, in turn, heats the air entering the intake opening 54 of the cylinder head 12 (col. 4 lines 39-51).

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1- 20 have been considered but are deemed to be moot in view of the new ground(s) of rejection.

Applicant's argument at page 5-6 of the amendment regarding an intake air heater which is capable of being mounted in an intake air manifold formed integrally in the cylinder head is noted; however, Thimmesh clearly teaches a heating device is coupled to the cylinder head which is adapted to includes an air intake opening and a mounting surface (col. 2 lines 60-65, col. 3 lines 53-67, and Figure 1).

Applicant's argument at page 7 of the amendment regarding a cylinder head having a connector aperture formed in a side surface for receiving an electrical connector for connection to a heating element is noted; however, Thimmesh clearly shows in Figure 1 the cylinder head is provides with the thread bore located in the side surface and align with the aperture of the heating device for providing a positive terminal for heating element (col. 4 lines 1-29).

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Applicant's argument at page 7-8 of the amendment regarding the intake air heater including the flange portion compressively positioned between the air delivery conduit and the cylinder head, and the flange portion is designed with a predetermined minimal thickness for minimizing the distance between the air delivery conduit and the cylinder head are noted; however, Themmis clearly shows in Figure 1 the heating device having the flange portion disposed in between the cover ,which an air inlet means is formed, and the cylinder head. The improved heating device allows the heating element to be recessed into the cylinder head thus permitting the cylinder intake airflow to be heated without significantly increasing the distance between the engine parts located above and below the heater (col. 2 lines 14-19).

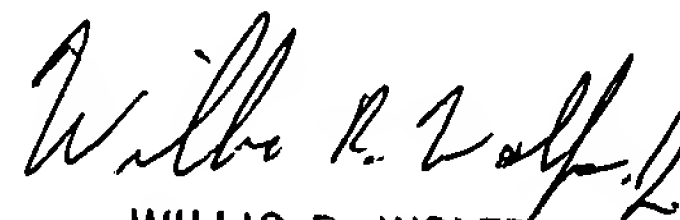
4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Hieu T. Vo whose telephone number is (703) 305-6800. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 4:00 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.



HIEU T. VO  
Patent Examiner  
Art Unit 3402

HTV  
April 4, 1997



WILLIS R. WOLFE  
PRIMARY EXAMINER  
ART UNIT 342